

**APPENDIX 11**  
**BIOLOGICAL ASSESSMENT**  
**for**  
**Jack Morrow Hills Coordinated Activity Plan**  
**Rock Springs Field Office**  
**Bureau of Land Management**  
**Rock Springs Field Office**  
**July 1999**

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Rock Springs Field Office staff specialists are currently preparing the Jack Morrow Hills Coordinated Activity Plan which proposes future management on public lands in the study area. The project area includes 622,340 acres of mixed ownership of which 567,720 acres is BLM surface, BLM minerals. Resource activities discussed in the Plan include air, soil and water, cultural, fire, hazardous materials, lands and realty, livestock grazing, minerals management, off-road vehicles, recreation, vegetation, watershed, wild horses, wildlife, and special management areas.

Recently the U.S. Fish and Wildlife Service (USFWS) supplied a list of species to be considered while preparing the document. The present list was verified by personnel communication on February 11, 1999. Further communication provided an updated species list in October 1999. Table A11-1 shows the plant and animal species which occur, may occur, or historically were found within the planning area.

**TABLE A11-1  
SPECIES LIST**

<b>USFWS Category</b>	<b>Common Name</b>	<b>Scientific Name</b>
Listed Species	Black-footed ferret	<i>Mustela nigripes</i>
	Bald eagle	<i>Haliaeetus leucocephalus</i>
	Whooping crane	<i>Grus americana</i>
	Blowout penstemon	<i>Penstemon haydenii</i>
	Ute ladies'-tresses	<i>Spiranthes diluvialis</i>
	Colorado River fish species:	
	Bonytail chub	<i>Gila robusta elegans</i>
	Colorado pikeminnow	<i>Ptychocheilus lucius</i>
	Humpback chub	<i>Gila cypha</i>
	Razorback sucker	<i>Xyrauchin texanus</i>
Proposed Species	Mountain plover	<i>Chadrius montanus</i>
	Canada lynx	<i>Lynx canadensis</i>
Candidate Species	Small rockcress	<i>Arabis pusilla</i>
	Swift fox	<i>Vulpes velox</i>

General management prescriptions for each resource activity are provided in the Green River RMP. Refer to this document for specific resource management prescriptions under the preferred alternative.

## I. PROJECT DESCRIPTION

Based on concerns raised by the public and Bureau of Land Management (BLM) personnel during preparation of the Green River Resource Management Plan (RMP), the Rock Springs Field Office area will prepare the Jack Morrow Hills Coordinated Activity Plan (JMHCAP). This activity plan will provide more specific management direction to prevent or address potential conflicts among potential development of energy resources, recreational activities and facilities and land uses in the activity planning area, grazing, important wildlife habitat, and other important resources. The planning area encompasses the Steamboat Mountain, Greater Sand Dunes, White Mountain Petroglyphs, and Oregon Buttes Areas of Critical Environmental Concern (ACECs), a portion of the South Pass Historic Landscape, and the Oregon Buttes, Honeycomb Buttes, Greater Sand Dunes, Buffalo Hump, Whitehorse Creek, South Pinnacles, and Alkali Draw wilderness study areas (WSAs). Attachment 1 provides a general location map. Attachment 2 is a map showing prominent

surface features. Attachment 3 is a complete list of resource issues and the affected acreage. Attachment 4 is a map showing the "core" area: Steamboat Mountain ACEC, Greater Sand Dunes ACEC, and the overlapping crucial habitat.

Preparation of the JMHCAP is an integrated activity planning effort to specify the appropriate land and resource uses, and level of use for BLM-administered public lands in the area. The land use planning decisions for leasing fluid minerals in the planning area were not ready for inclusion in the Green River RMP. Thus, these decisions were deferred in order to be determined in the course of developing the JMHCAP. Some Green River RMP decisions for mineral location in the area were also deferred to the JMHCAP. Thus, the primary objective of this effort will be to make the Green River RMP fluid minerals leasing decisions and mineral location decisions for the planning area and to determine the appropriate levels and timing of leasing and development of energy resources, while sustaining other important land uses and resources such as big game habitat, recreation, grazing, etc. These deferred Green River RMP decisions will result in amending the Green River RMP. Other actions resulting from this planning effort will include transportation planning and designating the roads that can be used in the area, and identifying grazing practices and recreational activities and facilities.

## II. CURRENT STATUS AND HABITAT USE BY THREATENED AND ENDANGERED SPECIES

Six federally listed endangered wildlife species may inhabit or may have inhabited the planning area. Endangered species include the black-footed ferret, Ute ladies'-tresses, Colorado pikeminnow, humpback chub, razorback sucker, and the bonytail chub.

Surveys have been conducted for the Colorado River pikeminnow and humpback chub, but they are now considered extirpated in southwest Wyoming. We will only discuss effects caused by water depletion for these species as the Rock Springs Field Office area has not been identified as critical habitat by the U.S. Fish and Wildlife Service.

### A. Listed Species

#### 1. Black-Footed Ferret (*Mustela nigripes*)

##### Population Distribution

Populations of black-footed ferrets (if any) are undetermined in the planning area. Historical documentation exists of the presence of ferrets in the planning area as recently as 1963 when a ferret and kits were commonly seen by several persons in the southwest part of Eden Valley. There have been other sightings near the planning area as recently as 1983. Other areas where ferrets are presumed to have occurred are Sublette Flats, Seedskaadee National Wildlife Refuge (outside the planning area), and the Red Desert.

Dr. Tim Clark has been one of the primary researchers of ferrets and their historical presence in Wyoming until and since the 1981 discovery of a colony at Meeteetse, Wyoming. His information on historical sightings was used extensively in this analysis. Each year ferrets are reported and the BLM or the Wyoming Game and Fish Department (WGFD) follows up with field surveys and personal interviews. The U.S. Fish and Wildlife Service has conducted some surveys and prairie dog colony inventories in the field office area since 1981. Surveys and inventories of prairie dogs have been conducted in the field office since 1975 with nearly 60 percent of the area completed. Some of the surveys were contracted by the BLM, some were performed by BLM biologists and summer temporaries, and others were done by other agencies. We also receive information as a result of surveys required to clear land use actions under Section 7 of the Endangered Species Act.

From 1851, when the first ferret was described by Audubon, to 1976, 145 sightings of at least 167 animals were evaluated as valid sightings or likely so. Of the 145 reports, 93 were classified as positive, 37 probable, and 15 possible. The diversity and competence of respondents lends credence to their sightings; such evidence overwhelmingly indicates that ferrets still exist in Wyoming and possibly this planning area. Remains of 23 ferrets from museum and private collections

were located. Of the 145 different sightings reported, 35 or 36 were of dead animals (10 or 11 killed in coyote traps, two in badger traps, one was shot, one a road kill, and one drowned in a stock tank). Additional mortality was attributed to poisoning for coyotes by several respondents. Young ferrets were reported in three instances.

##### Habitat Requirements

Potential areas of ferret habitat can be delineated due to their association with prairie dogs and prairie dog colonies although their diet may also contain some other small mammals and birds. Based upon archaeological and historical evidence, researchers have concluded that the black-footed ferret has never been very abundant. Primarily nocturnal, ferrets spend much of their time below ground and are rarely seen during daylight hours. This behavior is probably one of the reasons for so few sightings recorded in this planning area and elsewhere.

##### Conflicts

Past animal damage control programs probably have had the greatest impact on ferret mortality.

From the 1920s until the mid-1970s, predator control through trapping and poisoning resulted in some black-footed ferret mortality (67 percent of positive ferret reports). Secondary poisoning of ferrets is also known to have occurred from highly toxic rodenticides (or predicides) used in prairie dog eradication programs. Loss of ferret prey and secondary poisoning of ferrets must be considered in animal damage control plans and activities.

Varmint hunters seek out prairie dog colonies for target shooting. Because few people can distinguish between a ferret, a burrowing owl, or a prairie dog peering over the prairie dog mound, it is to be expected that some black-footed ferrets have been killed accidentally by target shooters. Some coyote trapping activities have also resulted in ferret mortality during the past. These activities need some measure of control, and agencies need to initiate a proactive campaign to educate hunters and trappers about ferret identification and their habits and avoidance programs.

Land use activities such as rights-of-ways, energy developments, use permits, urban expansion, mineral extraction, and grazing projects can reduce or fragment ferret habitat and therefore require inventory and clearances. Habitat losses have been minimized through analysis, planning, and coordination.

Status of the black-footed ferret is unlikely to change over the analysis period. Ferret populations are expected to remain low despite BLM efforts to minimize activities which could impact prairie dog colonies.

#### 2. Bald Eagle (*Haliaeetus leucocephalus*)

##### Population Distribution

Bald eagles are classified as partly migratory. Bald eagles from the northern states and Canada tend to migrate greater

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distances than do local eagles. About the second week of October, bald eagles begin arriving on the Green River. This coincides with the kokanee salmon and brown trout run which is probably a primary source of autumn food. By Thanksgiving, bald eagles can be found on the Big Sandy and Little Sandy rivers, and in Eden Valley. The bald eagle is a winter resident outside the planning area, along the Green River and Flaming Gorge Reservoir.

### Habitat Requirements

This bird is often called the fish eagle and with some justification. Its main food item is fish, it nests in association with water, and it most often winters where fish are available. Additional food items include ducks, coots, rabbits, carrion (particularly road kills), and small rodents. Bald eagles are found primarily along rivers and inland lakes where their nests are usually located in large coniferous or deciduous trees. The planning area does not contain any waterways with large trees and very limited fisheries. Currently, the only known active bald eagle nesting sites in the field office area are on the Green River on Seedskaadee National Wildlife Refuge and on the upper Green River. These locations are both outside of the planning area.

The bald eagle is fully protected by the Endangered Species Act of 1973 (Federal Register 43:6230-6233, February 14, 1978), the Bald and Golden Eagle Act, the Migratory Bird Treaties, and Wyoming Game and Fish Department laws.

### Conflicts

The accelerated decline in numbers of the species since World War II has been attributed to several factors. Both the peregrine falcon and the bald eagle have suffered reproductive problems due to organochloride pesticide poisoning. Shooting is another significant factor, causing an estimated mortality of 75 percent of the fledglings in some areas. Electrocution, while still a problem, has been reduced through alteration and redesign of many power transmission systems.

Raptors are especially susceptible to accidental poisoning through predator control programs. Poison baits set out to attract coyotes have caused the loss of at least 17 bald eagles in Wyoming during the period 1973-1991. Recent golden eagle losses have occurred in Wyoming and the field office as a result of unauthorized poison baits placed on public and state lands. Bald eagles are also at risk to this type of mortality.

There appears to be an increase in bald eagles over the past 20 years. Activities associated with the alternatives should have little or no impact in altering the present status of the bald eagle.

### 3. Whooping Crane (*Grus americana*)

As of March 21, 1990, only 13 whooping cranes were known to be alive and free-roaming in the Gray's Lake flock. Several of these found their way into the Rock Springs Field Office area over the past eight or nine years. In 1986, two Colorado State University summer wildlife volunteers working for BLM in the Farson area observed a lone whooping

crane on several occasions. The USFWS was notified and the bird was captured and taken to Grays Lake in an attempt to have it mated to another crane. During 1987 and 1988 a pair did spend part of the summers in Farson grainfields and wetlands. Two observations of whooping crane were made along Pacific Creek wetlands in 1991 and 1992.

Whooping cranes select muskeg, prairie potholes, and marshes. Their nest is a flat mound in the marsh usually containing two buff, blotched eggs. Food habits are similar to the resident sandhill crane (*Grus canadensis*). Though largely vegetarian, they eat some animal food. Insects, snails, frogs, mice, lizards, snakes and fish have been recorded in their diet. Besides eating seeds of wild plants and grains, they also consume herbaceous foliage, underground stems, tubers, and roots.

### Conflicts

The greatest mortality among whooping crane is collision with powerlines, cables, and fences along streams, wetlands, and marshes. New rights-of-way should also consider the impacts to large migrating birds and mitigate accordingly. Agricultural grain depredation in the Farson Project area by both sandhill cranes and whooping crane pose management conflicts which have been resolved by the WGFD paying depredation claims to landowners.

Major facilities and activities which conflict with whooping crane habitat include: powerlines, river cable crossings, riparian fences; recreation (off-road vehicles, camping, etc.), shooting (sport hunting and poaching), wetlands conversion, riparian habitat losses, agriculture and irrigation, water diversions, hazardous wastes, and chemical spills.

### 4. Blowout penstemon (*Penstemon haydenii*)

#### Population Distribution

Blowout penstemon is listed as an Endangered species by the U.S. Fish and Wildlife Service under the Endangered Species Act. This species, a member of the figwort family, occurs in two general areas of the interior western United States: in the Sand Hills of central Nebraska and a recently discovered location in the sand dune country south of the Ferris Mountains in south-central Wyoming. The total population consists of thirteen populations in Nebraska containing 3,000 - 5,000 individuals (Stubbendick, et al., 1997) and approximately 300 to 500 plants in one location of less than 20 acres in Wyoming. Threats to the species include ORV traffic, removal of fire, and leveling of the sand dunes.

#### Habitat Requirements

Blowout penstemon is a perennial herb reaching 1 foot tall with one to many stems. It has milky-blue to pale lavender flowers that are 1 inch long and found in 6 to 10 whorls. It is found in sparsely vegetated, actively shifting sand dunes and blow-out depressions. It is commonly found with thickspike wheatgrass, lemon scurf-pea, and rubber rabbitbrush. It flowers from late June to early July.

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### Conflicts

In order to gather as much information about this species as possible and comply with the provisions of the Endangered Species Act and BLM national policy, the Rock Springs BLM requires surveys of all suitable areas that could provide habitat for these species prior to surface disturbing activities. Blow-out penstemon has not been found in southwest Wyoming yet but a survey by the Wyoming Natural Diversity Database has been scheduled for the summer of 2000. Potential habitat is on the sand dune areas in the planning area.

Mandatory surveys and avoidance of this species would prevent adverse effects in the planning area. Consultation procedures with the U.S. Fish and Wildlife Service and mandated under Section 7 of the Endangered Species Act would be required for any project that would involve potential or known habitat areas for the blowout penstemon.

In addition, range condition assessments conducted under the Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management on BLM-administered lands would address this species.

### 5. Ute Ladies'-tresses (*Spiranthes diluvialis*)

#### Population Distribution

The Ute ladies'-tresses is listed as a Threatened species by the U.S. Fish and Wildlife Service under the Endangered Species Act. This species, a member of the orchid family, is known to occur in three general areas of the interior western United States: near the base of the eastern slope of the Rocky Mountains in southeastern and central Wyoming and north-central and central Colorado and Montana; in the upper Colorado River basin, particularly in the Uinta Basin; and along the Wasatch Front and westward in the eastern Great Basin, in north-central and western Utah and extreme eastern Nevada. The total population is approximately 20,500 individuals. The riparian and wetland habitats required by this species have been heavily impacted by urban development, stream channelization, water diversions and other watershed and stream alterations that reduce the natural dynamics of stream system, recreation, and invasion of habitat by exotic plant species (USFWS 1995).

The Ute ladies'-tresses has not been found in southwest Wyoming yet, although BLM-authorized searches for the species have been performed at several locations along the Green River. The closest known location of the Ute ladies'-tresses to the planning area is on the Green River at Brown's Park, Utah. Potential suitable habitat in the planning area may be found on Jack Morrow Creek and its tributaries (Rock Cabin Creek); Pacific Creek; the meadows at Crookston Ranch (located on Nitch Creek); the Sweetwater River and tributaries such as Oregon Slough, Harris Slough, Long Slough and Dickie Springs Creek; the sand dune ponds (flockets); and the perennial/intermittent streams in the Red Desert area (Bush Creek, Bear Creek, Red Creek, and Sand Creek). It is likely that this species will be found eventually in southwest Wyoming due to the proximity of the other populations and the similarity of riparian habitat types.

### Habitat Requirements

The Ute ladies'-tresses reaches a height of eight to 14 inches and is marked by an open cluster of several small white flowers arranged in a spiral resembling braids—a characteristic accounting for its name. The plant grows along streams, rivers, ponds, reservoirs, in bogs, or in wetland, riparian or seepage areas. This species has been found associated with cottonwood, willow, and prairie grassland communities. It generally blooms in late July through August and occasionally into September. It has been found in locations between 4,300 and 7,200 feet in elevation.

### Conflicts

In order to gather as much information about this species as possible and comply with the provisions of the Endangered Species Act and BLM national policy, the Rock Springs BLM requires surveys of all suitable areas that could provide habitat for these species prior to surface disturbing activities. In addition, the BLM, private industry, and the Wyoming Natural Diversity Database are performing searches for the Ute ladies'-tresses along the Green River and some of its tributaries during the summer of 1999.

Mandatory surveys and avoidance of this species would prevent adverse affects in the planning area. Consultation procedures with the U.S. Fish and Wildlife Service as mandated under Section 7 of the Endangered Species Act would be required for any project that would involve potential or known habitat areas for the Ute ladies'-tresses.

In addition, range condition assessments conducted under the Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management on BLM lands would address this species.

### 6. Bonytail Chub (*Gila robusta elegans*)

#### Population Distribution

This native nongame fish was once abundant throughout the Colorado River System, based on reports at the turn of the century (Cope 1872; Cope and Yarrow 1875; Kirsch 1889; Jordan and Evermann 1896). They were apparently found in suitable habitats in the Green River and tributaries all through western Wyoming. As early as 1960, bonytail chub were reported in decreasing numbers in the Lower Basin. The species was common in the Green River within Dinosaur National Monument from 1964 to 1966, but less common from 1968 to 1971. Presently the most abundant populations are in the Grays Canyon of the Green River in Utah.

### Habitat Requirements

Bonytail chub apparently occupy deep, swift, rock-sand areas in main channels of the Green River. Water temperatures in desirable habitat are important in that cold water discharges from dams displaces them downstream until water temperatures sufficiently increase. Lateral and in-stream movement studies of this species indicated they moved very little from their release point over a sixty-day period in summer. There is some vertical and lateral movement in the stream between daylight hours and dark.

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### Conflicts

Impacts to the bonytail chub are about the same as for the other rare Colorado River fishes. Water depletions, water diversions, reduced stream flows, and reduced water quality affect the potential to bring this species back from the brink of extinction. Low numbers of bonytail chub and the absence of natural reproduction strongly suggest a trend toward extinction. Actions taken as described in Section IV of this document may slow the rate of water depletions to the Colorado River System and to this species habitat.

### 7. Colorado Pikeminnow (*Ptychocheilus lucius*)

#### Population Distribution

The Colorado pikeminnow is found in the Colorado River drainage. Before construction of Flaming Gorge Dam, this fish lived in the Green River of Wyoming. Use of “rotenone” in removing undesirable fish species prior to closure of gates on Flaming Gorge probably extirpated it from Wyoming’s portion of the Green River. A recent discovery of pikeminnow near Baggs, Wyoming reestablishes the fish as occurring in Wyoming.

#### Habitat Requirements

Colorado pikeminnow are generally found in the large rivers of the Colorado system, although they have been found in medium-sized tributaries. They are the largest American minnow, reaching 80 pounds in the lower Colorado River. Young pikeminnow prefer slow backwater areas. Adults use a variety of habitats but are specialized for habituating fast-moving, silty, canyon waters. Spawning occurs in summer (July, August) at water temperatures of about 20o C. The preferred spawning habitat is probably over gravel in riffles. The Colorado pikeminnow feeds on crustaceans and small insect larvae when young. As pikeminnow become larger (over 8 inches (200 mm)), they become piscivorous. Although known from the field office area in the first half of the century, alteration of the Green River through changes in flow regimes and dam building has apparently eradicated this species from southwest Wyoming waters. As suitable habitat for this species no longer exists in the Green River of Wyoming, it may never again reoccupy historic habitat.

### Conflicts

Environmental problems as a result of public and private land development and construction activities leading to the probable extinction of Colorado River pikeminnow and their spawning in the Rock Springs Field Office area include: dam construction, river impoundment, diversions/augmentations, water pollution, hazardous wastes, chemical spills, irrigation, and agriculture. Refer to Section III of this document for the discussion of mitigation for Colorado River threatened and endangered fish species.

### 8. Humpback Chub (*Gila cypha*)

This fish is endemic to the Colorado River basin, but found only in fairly restricted areas. One of its populations occurred

in the Green River of Utah and Wyoming, but the species is probably extinct since the development of Flaming Gorge Dam. It is known to have occurred in the Green River and its tributaries after the turn of the century. Specimens of this fish were taken on the Black’s Fork and Bitter Creek prior to major dam construction in southwest Wyoming.

#### Population Distribution

The humpback chub is generally found in steep gradient canyons in deep, swift water with a rocky substrate. Little is known about its life history. Humpback chub have been observed feeding on the surface, and have also been caught on hook and line. Humpback chub spawn in early summer, and young prefer quiet backwater areas during their first year of life. Adults may reach 10 to 16 inches (250 mm) in length.

### Conflicts

Conflicts with continued existence of this fish species is the same as for the Colorado River pikeminnow and other sensitive fish species.

### 9. Razorback Sucker (*Xyrauchin texanus*)

#### Population Distribution

Originally found as far up the Green River as the present location of the City of Green River. In unimpounded waters, the razorback is limited to Upper Basin rivers, especially the Green, Yampa, and mainstream of the Colorado. The largest population, estimated at about 1,000 adults, lives in the Green River near Jensen, Utah. This species has not been documented in Wyoming in over 30 years.

#### Habitat Requirements

The fish thrives in torrential river rapids and swift water. This fish is one of the largest suckers in North America, weighing as much as 12 pounds. They have spawned in backwater flooded gravel pits in Colorado and up drainage ditches and culverts. The razorback was so common at one time before the turn of the century that a commercial fishery exploited this species for food. For some unexplained reason, populations of this fish have not been documented to successfully spawn in recent years.

### Conflicts

Elimination of clear, swift whitewater areas in Wyoming’s portion of the Green River has removed the potential habitat suitable for this species. Competition with non-native fish species is also given as a reason for population declines within suitable habitat. The razorback hybridizes with other sucker species in the Upper Colorado River Basin. Behnke and Benson (1980) summarized possible reasons for the decline as dams, impoundments, and land and water use practices. These human-made features drastically modified natural flows and river channel characteristics. They blocked spawning migrations and changed temperatures. Channelization, diversions, dams, and water use patterns in the main-stem and tributary streams have reduced or nearly eliminated backwa-

ters and off-stream impoundments needed for successful spawning.

## B. Proposed Species

### 1. Mountain Plover (*Charadrius montanus*)

#### Population Distribution

The mountain plover is a candidate species (proposed as threatened) inhabiting the high dry short-grass plains/prairies east of the Rocky Mountains, as well as the sagebrush grasslands throughout Wyoming. It is also known from northern Utah and northwestern Colorado. The focus of breeding activity appears to be northeastern Colorado.

Taxonomic changes recently placed this bird with other plovers and killdeer. The bird is of bland coloration about the size of a killdeer without the striking white marking on the head and breast. Mountain plover have been documented nesting in the cushion plant communities and windswept ridges of planning area (Beauvais and Smith, 1999). These are naturally occurring habitat type and are not expected to be negatively impacted by the proposed action.

#### Habitat Requirements

Parrish, et al. (1993) noted that mountain plover nests in northeastern Wyoming were found in areas of short (< 4 inches) vegetation on slopes of less than 3 percent. Any short grass, short shrub, or cushion plant communities could be considered as nesting habitat. In Colorado, the mountain plover diet is composed of 99.7 percent arthropods, with beetles, grasshoppers, crickets, and ants the most important food items (Baldwin 1971). Breeding bird surveys between 1966 and 1987 show an overall decline in the continental population of mountain plovers (U.S. Department of Agriculture, Forest Service, 1994a). Surveys completed in 1991 indicate that only 4,360 to 5,610 mountain plovers remain on the North American continent.

#### Conflicts

Probably the most important reasons for the decline of the mountain plover are human impacts and habitat alteration on breeding grounds and the degradation in the quality of wintering habitats. Loss of breeding habitat due to cultivation and prey base declines resulting from pesticide use are also threats to mountain plover survival. Cattle often maintain the open blue grama/buffalo grass preferred by mountain plovers so livestock grazing may benefit the species to some extent. However livestock grazing can also result in a reduction in prey species for mountain plovers due to the reduction in vegetation. Surveys would help determine breeding and nesting areas. Activities would avoid nesting and breeding areas during these periods.

### 2. Canada Lynx (*Lynx canadensis*)

The last known lynx in the field office area was taken by a hunter in the 1960s just north of Big Sandy Reservoir (outside the planning area). This area is out of its "typical" habitat,

although the cat probably came from the Wind River Mountains or foothills. Cat tracks are often seen in the Prospect Mountains and along the Wind River Mountains but these have always identified as cougar or bobcat. Commercial timber removal could remove some valuable cover, but size of sale blocks and select cutting practices should reduce impacts to this species. The planning area has no commercial timber areas, only small isolated woodlands. Modest restrictions in the way animal damage control is conducted will help reduce incidental take of this species.

#### Population Distribution

There is little population information on the lynx in the Rock Springs Field Office. Lynx were historically distributed throughout the Wyoming Range, Wind River Range, and Uinta Mountains. Lynx, like other species, wander out of the preferred or typical range and are seen in badland and desert habitats where they compete with other similar predators. However, outside forested habitats, they are more susceptible to predation due to a lack of escape cover.

#### Habitat Requirements

Lynx are generally found in association with snowshoe hare populations. The areas mentioned above have some small populations of snowshoe hares. When these populations cycle (not necessarily every 7 years as literature suggests), lynx must rely on squirrel, deer mice, partridge, cottontail or road kills. Highways and roadways can lead to vehicle/lynx collisions and impede movement. Primary habitat for lynx is Engelmann spruce, subalpine fir, and lodgepole pine at the higher elevations, generally 6,500 to 9,800 feet. This habitat occurs in only very limited amounts in the planning area and there are no known populations of snowshoe hare within the planning area.

#### Conflicts

Removal of old growth timber, clearcutting in large blocks, juniper chaining, and burning are all detrimental to perpetuating the species. Road intrusion into forested habitats results in displacement and often collision with individuals. Forest road reclamation and obliteration benefits lynx habitat. Wilderness also benefits lynx habitat. In some areas, timber management and fire suppression have affected lynx habitat. Conversion or alteration of native vegetation communities in and adjacent to lynx habitat would decrease prey populations. Pre-commercial thinning likely has a direct negative effect on snowshoe hare habitat, at least in the short term.

Grazing use levels, by livestock or wild ungulates, may increase competition for forage resources with lynx prey. By changing native plant communities, such as aspen and high elevation riparian willow, grazing can degrade snowshoe hare habitat.

Road and trail access and recreational use that results in snow compaction allows ingress of coyotes into lynx habitat, and increased competition for prey.

Poison baits, traps, snares, and any type of animal damage control which is not specific to a species pose a threat to the

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lynx. Lynx may be incidentally trapped during the trapping seasons for other carnivores, particularly bobcat and wolverine (Squires and Lorean 1999).

### C. Candidate Species

The BLM is mandated by law and policy to protect and manage threatened, endangered, candidate, and sensitive plant species and their habitat identified by the U.S. Fish and Wildlife Service. BLM is also required to protect and manage for sensitive species jointly identified and agreed to with the appropriate state agency. Additionally, it is the policy of the BLM to provide protection to species of concern, including former Candidate 1 and 2 species, so as to prevent probable future listing. Former Candidate species are provided the same protection as BLM Sensitive species under the BLM Manual Section 6840 "Special Status Species Management" as guided by Instruction Memorandum No. 97-18.

#### 1. Small Rockcress (*Arabis pusilla*)

##### Population Distribution

Small rockcress was listed as a Category 1 Candidate species for listing under the Endangered Species Act as either Threatened or Endangered. The Nature Conservancy ranks this plant as G1S1, extremely vulnerable to extinction globally and extremely vulnerable to extirpation statewide. Small rockcress is known from only one location in the southern Wind River Range in Fremont County, Wyoming. The single known population occurs on about 6 acres of suitable habitat near Pine Creek, on public land managed by the BLM outside the planning area.

##### Habitat Requirements

Small rockcress is found in crevices and on sparsely vegetated, very coarse soil in granite-pegmatite outcrops surrounded by sagebrush grassland. Most granite-pegmatite outcrops in the South Pass area were surveyed in 1986 by the Nature Conservancy-Wyoming Natural Diversity Database (Mariott 1988). Other suitable habitats along the Lander Cutoff were spot-checked. No other populations were located during that survey. More plants were found in the immediate area during a later survey conducted for the U.S. Fish and Wildlife Service (Dorn 1990). The entire population size is estimated at 600 individuals. Motorized recreational activity and livestock grazing in the area have been identified as threats to the population. The extremely restricted geographic range of this species makes it highly vulnerable to extinction.

A Habitat Management Plan (HMP/EA WY-0480WHA-P1) was developed for the protection of the small rockcress and its habitat in 1994. Protective management actions that have been implemented include designation of its habitat and surrounding area part of the Special Status Plant Area of Critical Environmental Concern (ACEC); construction of a 500-acre exclosure around the plants and their habitat; closure and rehabilitation of two-track trails through the ACEC, annual monitoring of the plant populations, closure within the ACEC to motorized vehicles, surface disturbing activities and livestock grazing; a No Surface Occupancy designation for

mineral leasing; and institution of a permanent mineral withdrawal (signed February 4, 1998). This species is also included in the Special Status Plant Area of Critical Environmental Concern (ACEC) which closes the habitat to surface disturbing activities.

##### Conflicts

Although it is not likely that this species occurs within the planning area due to limited habitat, granitic outcrops along the Sweetwater River may provide suitable habitat. Searches for the small rockcress would be required in suitable habitat prior to any surface disturbing activities by authorization of the Green River Resource Management Plan/Record of Decision (1997) and the BLM Manual Section 6840.

#### 2. Swift Fox (*Vulpes velox*)

##### Population Distribution

The swift fox, a federal candidate species, is a resident of the Great Plains from the northern Rocky Mountain foothills in southern Canada to western Texas. In Wyoming, this species primarily inhabits the eastern Great Plains grasslands of the state. A few sightings have been reported in the Rock Springs Field Office area.

##### Habitat Requirements

Living up to its name, the swift fox can reach speeds of over 50 km/hr. This speed allows it to catch its prey and also to escape predators such as coyotes, golden eagles, bobcats, and wolves. Swift fox dens are burrows located in sandy soil on open, bald prairie, along fence rows or in plowed fields and often in association with prairie dog towns. The diet of swift fox varies seasonally. Hunting primarily at night, they feed on a variety of food including: small mammals, birds, reptiles, amphibians, and insects.

##### Conflicts

Historically, the major threat to the swift fox has been extermination by humans. Trapping, shooting, and poisoning as part of predator control programs for coyotes and red fox caused the extinction of the Canadian population of this species. While it is now illegal to kill swift foxes, some are still confused with coyotes and red fox and are killed by mistake.

Current threats to the swift fox include habitat loss, automobile traffic, accidental killings, and conversion of grasslands to agricultural lands.

##### Other Special Status Species

General floristic inventories were conducted in the planning area by botanists from the University of Wyoming Rocky Mountain Herbarium and the Wyoming Natural Diversity Database between 1994 and 1996. Species specific status surveys were performed for *Lesquerella macrocarpa* (1994) and *Antennaria arcuata* (1994); permanent transects have been established and baseline information gathered for these species. In addition, the 1995 WNDD vegetation inventory



provided information on 10 species of special concern found within the planning area.

### III. DIRECT AND INDIRECT IMPACTS

#### Colorado River Water Depletions (and Platte River)

There are four species of fish in the upper Colorado River system that are federally listed as endangered. They are the Colorado pikeminnow (*Ptychocheilus lucius*), the humpback chub (*Gila cypha*), the bonytail chub (*Gila elegans*) and the razorback sucker (*Xyrauchen texanus*). Though they currently exist only downstream from this planning area, water from the Upper Green River basin affects the downstream habitat for these fish. Under the *Recovery and Implementation Program for Endangered Fish Species in the Upper Colorado River Basin* (RIP), any water depletions from tributary waters within the Colorado River drainage are considered as jeopardizing the continued existence of these fish. Tributary water is defined as water that contributes to instream flow habitat. Depletion is defined as water which would contribute to the river flow if not intercepted and removed from the system.

The RIP was developed as part of a cooperative effort between the states of Colorado, Utah, and Wyoming; the Bureau of Reclamation (BOR); U.S. Fish and Wildlife Service (USFWS); private water development interests; and various environmental groups. In addition, a cooperative agreement was signed by the governors of the states of Colorado, Utah, and Wyoming; the Secretary of the Interior; and the Administrator of the Western Area Power Administration, Department of Energy, to further implement the RIP.

The Green River RMP (ROD signed October 1997) covered the discussion on depletions to the Colorado River system for the entire Field Office. The biological opinion received from USFWS dated July 12, 1994 waived the depletion fee for the Green River RMP because the average annual depletions were expected to be less than 100 acre-feet. This is based on a previous biological opinion by the USFWS which stated that sufficient progress was being made by the RIP (July 5, 1994). All existing livestock watering facilities are covered by the "Programmatic Biological Assessment for Minor Water Depletions Associated with Reissuing of BLM Grazing Leases in the Platte River Basin" of July 1, 1999.

The BLM retains discretionary authority over individual projects within the area for the purpose of endangered species consultation. If the recovery program is unable to implement the RIP in a timely manner or make sufficient progress in recovery of these endangered species, re-initiation of Section 7 consultation may be required so that new reasonable and prudent alternatives can be developed.

The depletions caused by the activities within Jack Morrow Hills project area are a subset of the amount described in the Green River RMP and are covered by its Biological

Opinion, dated July 12, 1994. There are 5 "watersheds" draining the project area: Jack Morrow, Pacific, Killpecker, Sweetwater, and Great Divide Basin. The Pacific, Jack Morrow, and Killpecker watersheds are part of the Green River Basin and the Sweetwater watershed is part of the Platte River drainage. For purposes of comparison or tracking, water depletions are anticipated to occur from the drilling of gas wells (typical deep wells and coalbed methane wells) and potentially from livestock watering pits or ponds. The Reasonable Foreseeable Development (RFD) of the Green River RMP predicted that 1,206 oil and gas or coalbed methane wells could be drilled in the Field Office area. The JMHCAP represents 85 of those. For livestock pits or ponds, the Green River RMP estimated about 43 may be created or rebuilt in the Field Office area. The JMHCAP represents 23 of those. Average annual depletions that are anticipated by these actions could range from 4.9 to 7.4 acre-feet for oil and gas wells (standard and coalbed methane) within the Colorado River drainage, would be 0.13 acre-feet for oil and gas wells within the Platte River drainage, and probably would not exceed 11.5 acre-feet for livestock ponds (all within the Colorado River drainage) after all are installed.

### IV. CUMULATIVE IMPACTS

The Jack Morrow Hills CAP emphasizes maintenance and enhancement of threatened and endangered and special status species and biodiversity. The impacts to these species and critical habitats will be addressed as each activity plan is prepared or revised. The following discussion relates only to those activities within the plan which could cumulatively impact Threatened, Endangered, or Special Status plants and wildlife.

### V. COORDINATION WHICH WILL REDUCE ADVERSE THREATENED AND ENDANGERED IMPACTS

Much of the resource data for the planning area has been entered into the Geographic Information System. New information being collected this summer on mountain plovers will also be entered into the GIS system. This data has been and will be used to overlay conflicting resource information in areas of development and or protection, thereby coordinating resource management. The BLM is in the process of summarizing data for GIS input for habitats for other threatened and endangered species. These data will soon be available for future conflict analysis.

Inventories and clearances are required for authorized BLM activities in areas known or suspected to be essential habitat for animals and plants classified as a threatened, endangered, or special status species. These studies will be done in accordance with BLM and U.S. Fish and Wildlife Service guidelines to verify the presence or absence of these species. In the event that a listed species is identified, the lessee/permittee will be required to modify operational plans

## APPENDIX 11

to include the protection requirements of the species and its habitat (e.g., seasonal use restrictions, occupancy limitations, facility design modifications).

Habitat for threatened, endangered, and sensitive plant and animal species would be provided, maintained, or improved through vegetative manipulation, mitigation measures, or other management actions including habitat protection, acquisition, and easements.

Site specific activity planning (allotment management plans, habitat management plans, etc.) and site specific analysis of individual actions require further site specific analysis of effects to all resources including threatened and endangered and candidate species. Inventories will be conducted and the data bases kept current.

Off-road vehicle travel in the planning area would be limited to designated roads and trails to reduce adverse environmental damage and reduce conflicts with sensitive and/or threatened and endangered species. Some roads and trails would be closed and reclaimed as a result of transportation planning. Transportation planning would include proper road location, construction, reconstruction, design, and reclamation.

Known locations of candidate plant species communities are to be protected and closed to: 1) surface disturbing activities that could adversely affect the plants or their habitat; 2) the location of new mining claims (withdrawals will be pursued); 3) mineral material sales; 4) off-road vehicle travel; 5) geophysical exploration activities; and 6) the use of explosives and blasting.

Please refer to the Draft Environmental Impact Statement of the Green River RMP for additional mitigation and or protective measures.

## VI. MAY EFFECT/NO EFFECT DETERMINATION

The Jack Morrow Hills Coordinated Activity Plan is an overall plan for management direction of various commodity and natural resource programs.

Analysis of the proposed management prescriptions in the Preferred Alternative indicate that the JMHCAP is not likely to adversely affect the status of any previously discussed plant or wildlife species except for the four listed Colorado River fish species. Because of the anticipated water depletions from the Colorado River tributaries, these species may be adversely affected.

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